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## THE NON-EXISTENCE OF PEARY CHANNEL

Three years ago, Knud Rasmussen, the well-known Danish explorer, gave a preliminary account of his latest surveys in northern Greenland.<sup>1</sup> The results were of unusual interest because they not only connected up the work of Peary and Mylius Erichsen but corrected certain errors in the geography of northern Greenland that had persisted since Peary's first exploration of that coast in 1892.

There has just been received at the library of this Society Rasmussen's final report,<sup>2</sup> and geographers in this country should have great interest in it as setting straight at last a long-disputed point in Arctic geography. A review of Rasmussen's report will be published in the next number. Only the bearing of his surveys on Peary Channel will be considered in this note.

On the American expedition led by General A. W. Greely in 1881-1884, which formed part of an international co-operative undertaking to study Arctic conditions, the north coast of Greenland was surveyed by Lieut. J. B. Lockwood northeastward as far as Cape Washington (see map, Fig. 1). A reference to the map of these surveys<sup>3</sup> shows many fiords running toward the interior. The next traverse along this coast was that of Peary in 1900, when he reached Cape Wyckoff, some 150 miles beyond Lockwood's farthest.<sup>4</sup> It was on his earlier expeditions of 1892 and 1895 across the ice-cap of northern Greenland that Peary reported<sup>5</sup> the existence of a transverse channel which was supposed to mark the limits of Greenland on the north and establish its insularity. The channel was supposed to emerge at Nordenskiöld Inlet on the northwest. The official chart of the region by the U. S. Hydrographic Office<sup>6</sup> incorporates this feature and designates it "Peary Channel"; likewise many other charts and maps, including the large standard map of Greenland published in Denmark in 1906.<sup>7</sup>

The reported discovery was challenged from the first. Peary's companion, Astrup,<sup>8</sup> asserted the unbroken extension of Greenland far north of Navy Cliff, perhaps the

<sup>1</sup> *Geogr. Journ.*, Vol. 41, 1913, pp. 593-594 (abstracted in *Bull. Amer. Geogr. Soc.*, Vol. 45, 1913, p. 618); *La Géogr.*, Vol. 27, 1913, pp. 375-377.

<sup>2</sup> Knud Rasmussen: Report of the First Thule Expedition, 1912, *Meddelelser om Grönland*, Vol. 65, No. 8 (= pp. 285-340), 1915, with map, 1:1,300,000, by Peter Freuchen, of the connection between Peary Land and the mainland of Greenland. See also the other reports on the expedition in the same volume, designated Nos. 9 to 13, inclusive, especially Peter Freuchen: General Observations as to Natural Conditions in the Country Traversed by the Expedition, No. 9 (= pp. 343-370).

<sup>3</sup> Chart of Coast of North Greenland, 1:900,000 facing p. 186 of Vol. I of "Report on the Proceedings of the United States Expedition to Lady Franklin Bay, Grinnell Land," by A. W. Greely, 2 vols., Washington, 1888.

<sup>4</sup> Report of R. E. Peary, C.E., U.S.N., on Work Done in the Arctic in 1898-1902, with map, 1:3,168,000. *Bull. Amer. Geogr. Soc.*, Vol. 25, 1903, pp. 496-534; reference on pp. 517-520.

<sup>5</sup> R. E. Peary: The North Greenland Expedition of 1891-92, *Journ. Amer. Geogr. Soc.*, Vol. 24, 1892, pp. 536-558; reference on p. 555 under (3): "the existence of detached ice-free land . . . to the northward."

Cyrus C. Adams: Lieutenant Peary's Arctic Work, *Geogr. Journ.*, Vol. 2, 1893, pp. 303-316, with map, 1:3,000,000; references on pp. 310-311 and on the map, which shows the transverse channel.

R. E. Peary: Northward Over the "Great Ice," 2 vols., Stokes, New York, 1898; reference in Vol. I, pp. 345-346 *et al.*

<sup>6</sup> Baffin Bay to Lincoln Sea, Polar Regions, showing the recent discoveries by Civil Engineer R. E. Peary, U.S.N., . . . 1:1,400,000. Chart No. 2142, 1903.

<sup>7</sup> Kort over Grönland, udgivet af Commissionen for Ledelsen af de geologiske og geographiske Undsøgelser i Grönland. 1:2,000,000. Copenhagen, 1906.

<sup>8</sup> Elvind Astrup: Lieutenant Peary's Grönlandsekspedition, 1891-92, *Det Norske Geogr. Selskabs Årbog*, Vol. 4, 1892-93, pp. 25-44, with map of northern Greenland, 1:6,000,000; reference on p. 43.

In Astrup's subsequent book, "With Peary Near the Pole" (transl. from the Norwegian by H. J. Bull, Lippincott, Philadelphia, 1898), he modified his first view and favored the channel theory both in the text (pp. 227-228) and on the map.

most critical observation point in their journey for the determination of a cross channel, and so represented it on his map. Rabot<sup>9</sup> reviewed the discussion in 1894, asserting his faith in Astrup's contention, but in this country Rabot's conclusions were discredited.<sup>10</sup> And the government maps until within a few years gave the weight of official sanction. Astrup's first report is now proven to have been correct. First came Mylius Erichsen in 1906-1908, exploring the northeastern coast to the head of Independence Bay.<sup>11</sup> He died from cold and starvation in 1907 but left a report in a stone cairn that established the fiord-like character of Independence Bay and the non-existence of Peary Channel.<sup>12</sup> In 1909-1912 Mikkelsen conducted a search expedition to the region, found Erichsen's record and to some degree extended his work.<sup>13</sup> Koch, of the Mylius-Erichsen expedition, in 1907 carried his surveys far northward to Cape Bridgeman, thus connecting with Peary's coastal surveys of 1900.<sup>14</sup> Rasmussen, also searching for Erichsen, in 1912, found no record of Mikkelsen, owing to the latter's neglect to leave a report in the cairn from which he took Erichsen's last message.<sup>15</sup> Anxious to settle the channel problem Rasmussen skirted Mylius Erichsen Land and adjacent lands, crossed and went to the head of Independence Fiord and actually traced the land connection of so-called Peary Land with Greenland. To Erichsen belongs the credit of proving Peary Channel non-existent, to Rasmussen the credit of mapping it, and to Koch the credit of mapping the last corner of northeastern Greenland that was unknown until then (1907).

The final question is, What physical conditions led Peary to believe in a channel when an upland and high relief actually exist? With rare delicacy an explanation has been framed by Rasmussen himself. In Peary's cairn at Navy Cliff Rasmussen found Peary's now well-known letter dated July 5, 1892, recording his arrival at Independence Fiord. The letter makes no mention of the discovery of Peary Channel, and on this Rasmussen comments as follows:<sup>16</sup> "As will be seen from the above, Admiral Peary makes no mention here of any channel, and even calls the place Independence Fjord. It must therefore have been at a later date that the idea arose as to a channel between North Greenland and Peary Land. In any case, it is found marked on all American maps under the name of Peary Channel. It is also impossible to see the base of the fjord from the point on Navy Cliff where the cairn was built: all that can be seen is that the ice from the fjord runs farther on inland. This, with the fact that a hollow runs through Valmuedalen over towards Nordenskjöld's Inlet on the west, explains how the theory originated."

Neither the maps nor the charts based on data furnished by Peary show Peary Channel as a surveyed but only as a probable connection between Nordenskiöld Inlet on the west and Independence Fiord on the east. On the other hand Peary's account

<sup>9</sup> Charles Rabot: Les récentes explorations arctiques, *Compte Rendu des Séances de la Soc. de Géogr. [de Paris]*, 1894, pp. 428-437; reference on p. 433.

<sup>10</sup> *Journ. Amer. Geogr. Soc.*, Vol. 27, 1895, pp. 60-62.

<sup>11</sup> Cf. A. Trolle: The Danish North-East Greenland Expedition, *Geogr. Journ.*, Vol. 33, 1909, pp. 40-65, with map, 1:4,000,000.

Achton Friis: Im Grönlandeis mit Mylius Erichsen. German translation from the Danish by F. Stichert. 2nd. edit. Spamer, Leipzig, 1913.

G. Amstrup: Report on the *Danmark* Expedition to the North-East Coast of Greenland, 1906-1908, *Meddelelser om Grönland*, Vol. 41, No. 1 (= pp. 1-270), 1913, with map of northeastern Greenland, 1:2,000,000, Pl. II. [The official report.]

<sup>12</sup> G. C. Amstrup: Mylius-Erichsen's Report on the Non-Existence of the Peary Channel: Information Brought Home by Ejnar Mikkelsen, *Meddelelser om Grönland*, Vol. 41, No. 5 (= pp. 471-474), 1913.

<sup>13</sup> Ejnar Mikkelsen: Expedition to North-East Greenland, 1902-12, *Geogr. Journ.*, Vol. 41, 1913, pp. 313-324, with map, 1:4,000,000.

Ejnar Mikkelsen: Lost in the Arctic, Doran, New York, 1913, with map, 1:2,000,000.

<sup>14</sup> *Op. cit.* in footnote 11, third entry, pp. 124-135.

<sup>15</sup> *Op. cit.* in footnote 2, p. 317.

<sup>16</sup> *Ibid.*, p. 326

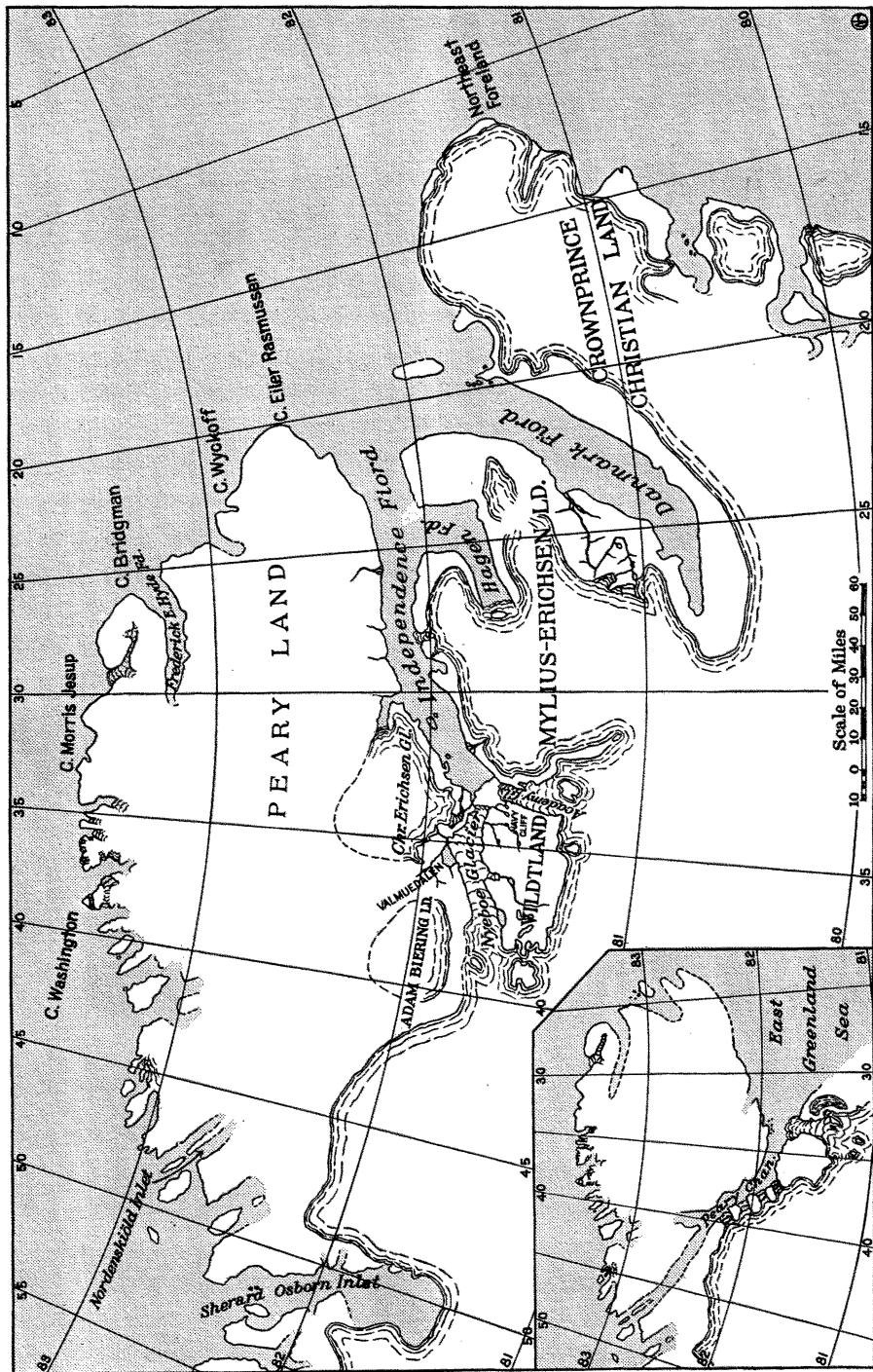


FIG. 1—Sketch map of northernmost Greenland according to present knowledge, based on the surveys of the Greely (1882), Peary (1892 and 1900), Mylius Erichsen (1906-08), and Rasmussen (1912) expeditions. Scale, 1:3,500,000. For the map sources see footnotes 3, 6, 11 (third entry), and 2. The inset shows the supposed Peary Channel as represented on U. S. Hydrographic Office Chart No. 2142.

of the "fiord," later called "channel," and his conclusion regarding it are positive and clear, though carried to lengths not warranted by his observations. In "Northward Over the 'Great Ice,'" page 317, and again on page 318, a fiord is mentioned near the northern end of Peary's inward march. The most significant passages occur later. "Looking to the west [from Navy Cliff, see map, Fig. 1], we saw the opening of the fjord [later known as Peary Channel] that had barred our northern advance. . . . Now we knew that we had paralleled its course across the northern end of the mainland from Robeson Channel clear to the Arctic Ocean off the shores of north-east Greenland. For days we had kept constantly in view the mountain masses forming the southern boundary of this channel, and through rifts in the mountains we had from time to time seen this depression, and had now and then caught glimpses of the frozen channel occupying it; and we had seen beyond it mountains and fjords stretching between them. It was evident that this channel marked the northern boundary of the mainland of Greenland" (pp. 345-346). . . . "There is every reason to believe that to the north-west, north, and north-east we were gazing upon an archipelago whose western limits Lockwood had discovered in 1882" (p. 347). A deep fiord may enter from the west along the line of the supposed Peary Channel. For the rest, as above quoted, the conclusion rested upon "glimpses," "from time to time," "through rifts," "in [distant] mountains," of what was supposed to be a channel or fiord. Glaciers of low gradient may under such circumstances have been mistaken for an ice-coated fiord. Nyeboe Glacier lies approximately in the line of continuation of Independence Fiord and Peary Channel. On the other hand, Rasmussen thinks that the Valmuedalen depression may have been mistaken for a channel.

Thus in the long progress of charting the world's coasts some things are "put on the map," to be taken off again as detailed surveys take the place of reconnaissance journeys and actual traverses and maps are substituted for sketches and hypotheses based on distant views. But we should be careful to give proper credit to the pioneer in any region, even if the pioneer sometimes draws too large and dramatic a conclusion from a small, though valuable, body of fact.

When an error is discovered an explorer's critics seldom take the trouble to look for extenuating facts. We have called attention to several in the paragraph above. There is one which is still more important. Greenland is in general a high plateau, a vast ice-coated carapace. Nansen, De Quervain, Koch, Rasmussen, and Peary are all agreed as to its topographic character. Koch found mountains reaching above 9,500 feet in latitude 72°, but that is quite exceptional. At the border the ice sheet exhibits a zone of transition where valley glaciers alternate with rugged forelands. The visible relief of the island is greatest at its border. The northern end of Greenland appears to be exceptional in this respect. Its physiography is distinct. Instead of a dome-shaped plateau covered with ice it appears to be a mountainous region with deep valleys filled with and scoured by ice and thus transformed into peaks, uplands, and glacial troughs. Peary knew the west and north coasts well. When in his journey of 1892 he reached the northern limit of the main ice sheet, the *inlandeis*, as it is termed, and saw before him mountains separated by deep valleys, it was altogether natural for him to suppose that he was near the limits of the northern coast. The deep glacier-filled valleys at a distance looked like fiords. Further exploration of the region would now be desirable; in fact Mikkelsen planned both to explore and to survey the land along the supposed channel in 1910,<sup>17</sup> but learning through Mylius Erichsen's report of the non-existence of the channel was obliged to turn back. It appears that the local ice fields of "Peary Land" are separated from the main Greenland cap, along the line of the now disproved "Peary Channel," by a belt of rugged country. Lieut A. Trolle reported<sup>18</sup> that

<sup>17</sup> *Op. cit.* in footnote 13, first entry, p. 317.

<sup>18</sup> *Op. cit.* in footnote 11, first entry, p. 52.

Peary Land is not covered with inland ice and that it has mountains up to 2,000 feet in height—facts based on the report of Koeh, topographer of the Mylius-Erichsen Expedition. Peary discovered some quite remarkable physiographic features, a fact we should not forget in noting corrections in his interpretation of them. Also he made a sledge journey across Greenland which up to that time had no equal in polar exploration.

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## THE AFRICAN COLONIES OF GERMANY AND THE WAR

As a part of the military operations of the war, the four African colonies of Germany were attacked by the Allies. Three, German Southwest Africa, Kamerun, and Togo, have been conquered, while in German East Africa fighting is still going on. Their ultimate fate depends upon the final issue of the war. These colonies<sup>1</sup> have a total area of 1,030,150 square miles and are thus a little more than four times as large as Germany. At the beginning of the war, in August, 1914, they had reached a stage of prosperity that bade fair to justify the enormous expenditure of money, if not the appalling loss of life, chiefly native, that had marked their development. They were all in a thriving condition though still in the early stages of their history.

In the management of her colonies, Germany has shown marked limitations as well as superior qualities. In her dealings with the natives, coercion has been the policy, though England, for example, has found it wise as well as humane to use severe measures only when milder methods have failed. The military expenditures have been enormous in all the German colonies excepting Togo. Between 1891 and 1903, Germany sent out twenty-nine punitive expeditions against the Kamerun natives. No other power in Africa has waged such a war against primitive blacks as that which, in two years, nearly exterminated the Hereros (Bantus) of German Southwest Africa. In brief, German administration in the African colonies has very often been too inflexible, rigid, and tactless to meet the condition of natives, most of whom would have been tractable if some degree of deliberation, patience, and kindness had characterized the dealings with them.

In some other respects, however, and chiefly along the lines of scientific development, Germany has excelled all other colonial powers in Africa. She has carried on scientific surveys upon which are based the maps of parts of her large territory—maps that are unsurpassed and rarely equaled by those of any other of the colonial powers. The colony of Togo is the only part of colonial Africa whose detailed topographic map is completed.

When Germany entered the colonial field in 1884 it was generally believed by the other powers that all the more promising parts of Africa had already been appropriated. Germany did not long delay the initiation of a most thorough and scientific investigation of colonial resources and possibilities of development. As the prospects were gradually unfolded Germany, as well as the other powers, were surprised by the revelation of the potential value of all her colonies. German Southwest Africa, chiefly reputed to be a wide zone of worthless sand, was found to be rich in gold, diamonds, and other mineral resources, with wide areas of agricultural and grazing lands in the north, large opportunities for the reclamation of lands in the east by means of irrigation, and a climate that fitted the country to become the home of many thousands of white settlers. When England seized the colony last year she found there some 15,000 German farmers whose homes were surrounded by gardens, fields, and pastures.

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<sup>1</sup> German Southwest Africa, acquired April 24, 1884; Togo, July 2, 1884; Kamerun, July 14, 1884; German East Africa, February 17, 1885.